



## Possible role of climate changes in variations in pollen seasons and allergic sensitizations during 27 years

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**Year:** 2010  
**Journal:** Annals of Allergy, Asthma & Immunology : Official Publication of The American College of Allergy, Asthma, & Immunology. 104 (3): 215-222

### Abstract:

**BACKGROUND:** Climate changes may affect the quality and amount of airborne allergenic pollens. The direct assessment of such an effect requires long observation periods and a restricted geographic area. **OBJECTIVE:** To assess variations in pollens and allergic sensitizations across 27 years in relation to climate change in a specific region. **METHODS:** We recorded pollen counts, season durations, and prevalences of sensitizations for 5 major pollens (birch, cypress, olive, grass, and Parietaria) in western Liguria between 1981 and 2007. Pollen counts were performed using a Hirst-type trap, and sensitizations were assessed by means of skin prick testing. Meteorologic data for the same period included average temperatures, direct radiation, humidity, number of sunny days, and rainfall. **RESULTS:** There was a progressive increase in the duration of the pollen seasons for Parietaria (+85 days), olive (+18 days), and cypress (+18 days), with an overall advance of their start dates. For Parietaria, there was an advance of 2 months in 2006 vs 1981. Also, the total pollen load progressively increased for the considered species (approximately 25% on average) except for grasses. Percentages of patients sensitized to the pollens increased throughout the years, whereas the percentage of individuals sensitized to house dust mite remained stable. These behaviors paralleled the constant increase in direct radiation, temperature, and number of days with a temperature greater than 30 degrees C. **CONCLUSION:** The progressive climate changes, with increased temperatures, may modify the global pollen load and affect the rate of allergic sensitization across long periods.

**Source:** <http://dx.doi.org/10.1016/j.anai.2009.12.005>

### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Meteorological Factors, Meteorological Factors, Meteorological Factors, Precipitation, Temperature, Unspecified Exposure

**Air Pollution:** Allergens, Interaction with Temperature

**Temperature:** Fluctuations

**Geographic Feature:** 

# Climate Change and Human Health Literature Portal

resource focuses on specific type of geography

None or Unspecified

## **Geographic Location:** ☒

resource focuses on specific location

Non-United States

**Non-United States:** Europe

**European Region/Country:** European Country

**Other European Country :** Italy

## **Health Impact:** ☒

specification of health effect or disease related to climate change exposure

Other Health Impact

**Other Health Impact:** allergic sensitization

## **Resource Type:** ☒

format or standard characteristic of resource

Research Article

## **Timescale:** ☒

time period studied

Time Scale Unspecified